



US006577080B2

(12) **United States Patent**  
**Lys et al.**

(10) Patent No.: **US 6,577,080 B2**  
(45) Date of Patent: **Jun. 10, 2003**

(54) **LIGHTING ENTERTAINMENT SYSTEM**(75) Inventors: **Ihor Lys, Boston, MA (US); George G. Mueller, Boston, MA (US)**(73) Assignee: **Color Kinetics Incorporated, Boston, MA (US)**

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/815,418**(22) Filed: **Mar. 22, 2001**(65) **Prior Publication Data**

US 2002/0047646 A1 Apr. 25, 2002

**Related U.S. Application Data**

(63) Continuation of application No. 09/742,017, filed on Dec. 20, 2000, now abandoned, which is a continuation of application No. 09/213,548, filed on Dec. 17, 1998, now Pat. No. 6,166,496, and a continuation-in-part of application No. 08/920,156, filed on Aug. 26, 1997, now Pat. No. 6,016,038.

(60) Provisional application No. 60/071,281, filed on Dec. 17, 1998, provisional application No. 60/078,861, filed on Mar. 20, 1998, provisional application No. 60/079,285, filed on Mar. 25, 1998, provisional application No. 60/090,920, filed on Jun. 26, 1998, and provisional application No. 60/068,792, filed on Dec. 24, 1997.

(51) **Int. Cl.<sup>7</sup>** ..... **H05B 37/02**(52) **U.S. Cl.** ..... **315/362; 315/292; 315/316; 315/324**(58) **Field of Search** ..... **315/316, 317, 315/292, 295, 291, 362, 228, 324; 348/460, 462, 464, 465, 476, 480, 484, 489**(56) **References Cited****U.S. PATENT DOCUMENTS**

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**Primary Examiner—Haissa Philogene**(74) **Attorney, Agent, or Firm—Wolf, Greenfield & Sacks, P.C.**(57) **ABSTRACT**

Provided herein are methods and systems for signal processing for illumination control signals, which may include a decoder for decoding a combined signal and a connection for delivering a portion of the combined signal to an illumination source, which source is capable of generating an illumination condition from the portion of the combined signal. The system may also include an encoder for encoding the combined signal from an illumination control signal and a second signal. The illumination source may be an LED system that is controlled by a microprocessor to vary at least one of the color and intensity of the illumination produced by the illumination source in response to the illumination control signal.

**109 Claims, 75 Drawing Sheets**